Delta
Environmental Consultants, Inc.

Solving environment-related business problems worldwide

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September 19, 2002

Mr. Ken Theisen
USEPA/Region V
77 West Jackson Boulevard HSE-5J
Chicago, IL 60604

Subject: Preliminary Enhanced Product Recovery Results
Sylvan Slough Removal Action Site
Rock Island, Illinois
Delta Project No. A097-130

Dear Mr. Theisen:

This report details preliminary results of supplementary remedial actions for the Sylvan Slough site located in Rock Island, Illinois. The enhanced fluid recovery technology (EFRT) activities presented herein were conducted in accordance with the *Enhanced Product Recovery Work Plan*, dated July 19, 2002. Locations of wells discussed herein are shown on the enclosed figures.

Product Thicknesses

Measurement of ground water and product levels was completed at all project monitoring and recovery wells on August 19, 2002. Free product was measurable in 20 wells, as shown on Table 1. Initial thicknesses were greatest at monitoring wells GM-24D (1.70 feet), GM-6-99 (2.52 feet), RW-3 (2.57 feet), and GM-20D (2.91 feet). Figure 1 illustrates the locations at which product was observed prior to the EFRT event.

Product was also measurable in wells GM-2 (0.24 foot), GM-3 (0.01 foot), and GM-4 (0.23 foot). However, it is Delta's understanding that these are recovery wells operated by another consulting company as part of a separate remediation project. Therefore, these three wells were not included in the EFRT event.

Enhanced Fluid Recovery Technology (EFRT)

On August 20, 2002, EFRT was performed at monitoring wells GM-6-99, GM-20S, GM-20D, GM-27D, GM-29D, GM-30, RW-3, and RW-G2; and extraction wells GM-24S, GM-24D, GM-25D, GM-28S, GM-28D, GM-29S, GM-31, RW-5, RW-7, GM-C2, GM-C3, and GM-J2.

At each location, vacuum was initially applied for up to 10 minutes or until all measurable product was removed from the well. Water and free product recovered during the EFRT event was stored in the vacuum truck and transported off site for disposal at the Enviromark facility in Davenport, Iowa.

A total of 175 gallons of product and water were extracted from the site wells during the test period. Additionally, based upon EFRT tests at similar sites, Delta calculates that approximately 2 gallons of total petroleum hydrocarbons were removed during the test in vapor phase form within the vacuum truck exhaust. Therefore, a total of approximately 177 gallons of petroleum-impacted fluids were recovered during the EFRT event.

After EFRT had been applied, ground water elevations and product thicknesses were measured at approximate frequencies of hourly for the first four hours, four times daily during the next day, daily for the next three days, and biweekly until the measurements stabilized. Select measurement data recorded at each of the 20 wells is summarized on Table 1.

Based on the rapid recovery of product thicknesses measured at monitoring wells GM-6-99 and GM-20D, additional periods of EFRT were conducted on August 20 and August 21, 2002.

Summary of Results

After two weeks of post-EFRT monitoring, 11 of the 20 wells had measurable product. Of these 11, only eight wells had product thicknesses of greater than 0.01 foot: GM-6-99 (2.68 feet), GM-20D (3.92 feet), GM-24D (1.25 feet), GM-24S (0.04 foot), GM-25D (0.06 foot), GM-C2 (0.03 foot), GM-J2 (0.20 foot), and RW-7 (0.05 foot).

Figure 2 shows the estimated horizontal extent of measurable product two weeks after the EFRT event. Figures 1 and 2 illustrate the reduction in oil thicknesses achieved by the remedial event.

Monitoring and Future Actions

During the September 2002 site visit, a complete round of ground water and product level measurement will be performed. As discussed in the Work Plan, oil-sorbent socks will be placed in all wells at which product is observed, if appropriate.

Based on the apparent success of the EFRT, additional product recovery may be performed at those wells that exhibit product thicknesses at or near those measured prior to the event. An additional EFRT round may be completed in fall 2002. Additional adjustments to product recovery methods such as restarting of the extraction system or placement of pumps in select monitoring wells will also be continually evaluated.

Enviromark will continue to perform weekly site visits to check for sheen on the adjacent river surface, and to ensure that the area remains secure. As has been done in the past, oil-sorbent booms will be placed in the river if sheens are noted. No sheen has been observed thus far in 2002.

Delta will continue to submit monthly project status reports documenting the recovery event and continual monitoring and adjustments. The need for additional remedial activities would be submitted in a work plan proposal if necessary.

If you have any questions regarding this status update and/or future activities, please contact me at (651) 697-5243.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Dean A. Krebs, P.E.
Project Engineer/Project Manager

DVP/mjw

Enclosure

cc: Mr. Gregory Jeffries – Burlington Northern Santa Fe
Mr. Jack Shih – Navistar International Transportation Corp.
Mr. Doug Wilson – Maytag Corporation

Table 1
Product Thickness Summary - Enhanced Product Recovery
Sylvan Slough - Rock Island, IL
Delta No. A097-130

		Product Thickness (feet)								
			Post-EFRT							
Monitoring Location	Monitoring or Recovery Well	Pre-EFRT 8/19/2002	Immediately 8/20/2002	1 hour 8/20/2002	2-4 hours 8/20/2002	1 day 8/21/2002	2 days 8/22/2002	1 week 8/26-27/02	2 weeks 9/3/2002	Percent Reduction
GM-6-99	MW	2.52	--	0.04	0.07	0.24	0.12	1.28	2.68	0
GM-20D	MW	2.91	0.10	0.15	0.40	2.73	5.47	4.60	3.92	0
GM-20S	MW	0.18	--	--	--	0.01	0.02	0.03	0.01	94
GM-27D	MW	0.61	--	--	--	--	--	--	--	100
GM-29D	MW	0.67	--	--	--	--	--	--	--	100
GM-30	MW	0.89	--	--	--	--	--	--	--	100
RW-3	MW	2.57	--	--	--	--	--	--	--	100
RW-G2	MW	0.16	--	--	--	--	--	--	--	100
GM-24D	RW	1.70	--	0.01	0.01	0.11	0.21	0.45	1.25	26
GM-24S	RW	0.17	--	0.01	0.01	0.02	0.05	0.04	0.04	76
GM-25D	RW	0.02	--	--	--	--	--	--	0.06	0
GM-28D	RW	0.02	--	--	--	--	--	--	--	100
GM-28S	RW	0.07	--	--	--	--	0.01	0.01	0.01	86
GM-29S	RW	0.02	--	--	0.01	0.01	0.02	--	--	100
GM-31	RW	0.54	--	--	--	--	--	--	--	100
GM-C2	RW	0.07	--	--	--	--	0.01	0.04	0.03	57
GM-C3	RW	0.21	--	--	--	--	--	--	--	100
GM-J2	RW	0.90	--	--	--	0.01	0.04	0.06	0.20	78
RW-5	RW	0.01	--	--	--	--	--	--	0.01	0
RW-7	RW	0.05	--	--	--	--	0.01	0.01	0.05	0

Notes

-- = product not measurable.

Values listed for 2-4 hours, 1 day, 2 days, and 1 week represent maximum values of multiple measurements conducted during that specific period.

Percent reduction is 2 week product thickness compared to pre-EFRT measurement.

PRODUCT THICKNESSES
POST-EFR
2 WEEKS
9/3/02

GM-E1
RW-G2
GM-32
GM-31
GM-20S (0.01)
GM-20D (3.92)
RW-4
RW-6
RW-7 (0.04)
GM-22S
GM-22D
MW-1
GM-30
RW-5 (0.01)
RW-G3
GM-F2
MW-6
GM-29S
GM-29D
RW-2
GM-27D
GM-23D
GM-23S
RW-11
RW-1
GM-27S
RW-3
GM-28S (0.01)
GM-24S (0.01)
GM-24D (1.29)
GM-C2 (0.02)
RW-12
GM-25S
GM-25D (0.03)
MW-7
GM-F3
GM-A1
GM-B1
MW-F1
GM-B2
GM-28D
GM-C1
GM-J1
BM-C3
GM-J2 (0.20)
GM-J3
6-99 (2.53)
RUINS
G-A2
WALLS
WALL
GM-A3
GM-1
GM-2
GM-3
GM-4
WALLS
MW-5

LEGEND

- MONITORING WELL/NUMBER
- FENCE
- RAILROAD TRACKS
- P/A PAVED AREA
- TREE
- TREE LINE
- WATERS EDGE

North

0 80

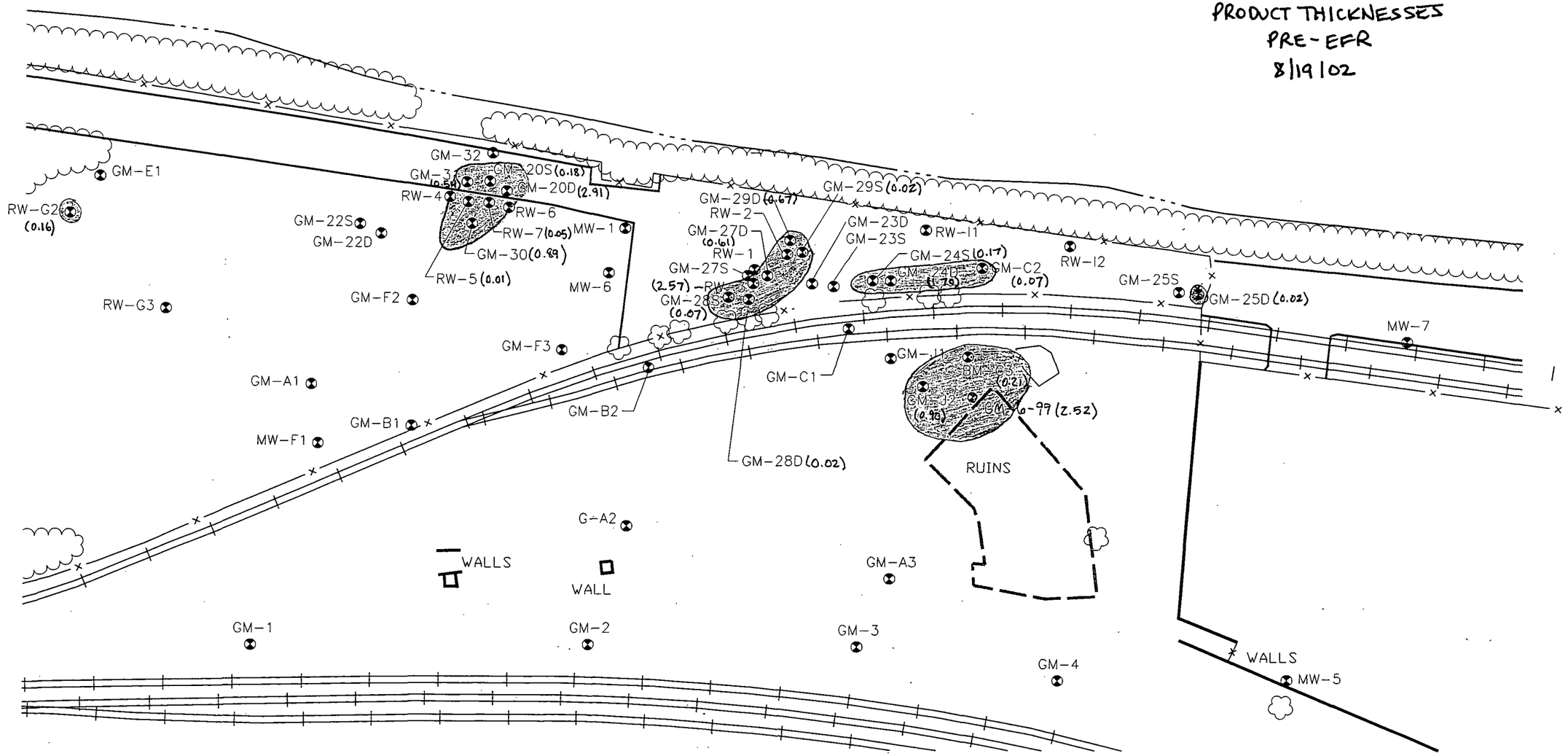
SCALE IN FEET

FIGURE 2
POST-EFR PRODUCT THICKNESSES
SYLVAN SLOUGH
BNSF/NAVISTAR
ROCK ISLAND, ILLINOIS

PROJECT NO.	PREPARED BY	
A097-130	GP	DD
DATE	REVIEWED BY	FILE NAME
8/14/02		97130ASM-1

Delta Environmental Consultants, Inc.

PRODUCT THICKNESSES
PRE-EFR
8/19/02



LEGEND

- MONITORING WELL/NUMBER
- FENCE
- RAILROAD TRACKS
- P/A PAVED AREA
- TREE
- TREE LINE
- WATERS EDGE

North

0 80

SCALE IN FEET

FIGURE 1
PRE-EFR PRODUCT THICKNESSES
SYLVAN SLOUGH
BNSF/NAVISTAR
ROCK ISLAND, ILLINOIS

PROJECT NO.	PREPARED BY	
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October 16, 2002

Mr. Ken Theisen
USEPA/Region V
77 West Jackson Boulevard HSE-5J
Chicago, IL 60604

Subject: Status Update – Post Enhanced Product Recovery Monitoring
Sylvan Slough Removal Action Site
Rock Island, Illinois
Delta Project No. A097-130

Dear Mr. Theisen:

This report updates the status of supplementary remedial actions for the Sylvan Slough site located in Rock Island, Illinois. Ground water and product elevation measurements completed since Delta's *Preliminary Enhanced Product Recovery Results* report (September 19, 2002) are detailed herein. Locations of wells discussed in this report are shown on the enclosed figure.

Product Thicknesses

On September 23, 2002, ground water and product levels were measured at monitoring and recovery wells at which enhanced fluid recovery technology (EFRT) was performed. Ground water and product levels were also collected at all of the project extraction wells.

Product thicknesses at the applicable EFRT wells measured since the remedial event are summarized on Table 1. In general, slow recovery of product thicknesses was observed at a majority of the wells. Each of the 20 wells at which EFRT was applied contained measurable oil. Product thicknesses equal to or less than 0.01 foot were observed at nine of the wells. The remaining 11 wells contained oil thicknesses at or near the pre-EFR measurements.

Extraction well ground water and product levels measured in August and September 2002 are shown on Table 2. In addition to the 12 extraction wells at which EFRT was applied, product was measurable at recovery wells GM-22D (1.58 feet), RW-4 (less than 0.01 foot), RW-6 (less than 0.01 foot), GM-D1 (less than 0.01 foot), and RW-I1 (less than 0.01 foot).

Product Absorbent Socks

As shown on Tables 1 and 2, product absorbent socks were placed in all wells with measurable thicknesses with the exceptions of GM-6-99, GM-20D, GM-22D, and GM-24D. Management of product within these four wells is described in the following section.

Monitoring and Future Actions

During the October 2002 site visit, a complete round of ground water and product level measurements will be collected. Oil-sorbent socks will be replaced, if necessary, or installed in wells that display oil thicknesses.

At wells containing significant product thicknesses, such as GM-6-99, GM-20D, GM-22D, and GM-24D, additional product recovery may be performed. Due to the slow recovery of oil thicknesses observed during the post-EFRT monitoring, it is likely that continuous operation of the extraction system does not allow for infiltration of significant quantities of product. Therefore, intermittent recovery actions such as periodic pump operation or manual bailing may be more appropriate at these locations.

Delta will continue to submit monthly project status reports documenting the recovery event and continual monitoring and adjustments. If you have any questions regarding this status update and/or future activities, please contact me at (651) 697-5243.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Dean A. Krebs, P.E.
Project Engineer/Project Manager

DVP/mjw

Enclosure

cc: Mr. Gregory Jeffries – Burlington Northern Santa Fe
Mr. Jack Shih – Navistar International Transportation Corp.
Mr. Doug Wilson – Maytag Corporation

Table 1
Product Thickness Summary - Enhanced Product Recovery
Sylvan Slough - Rock Island, IL
Delta No. A097-130

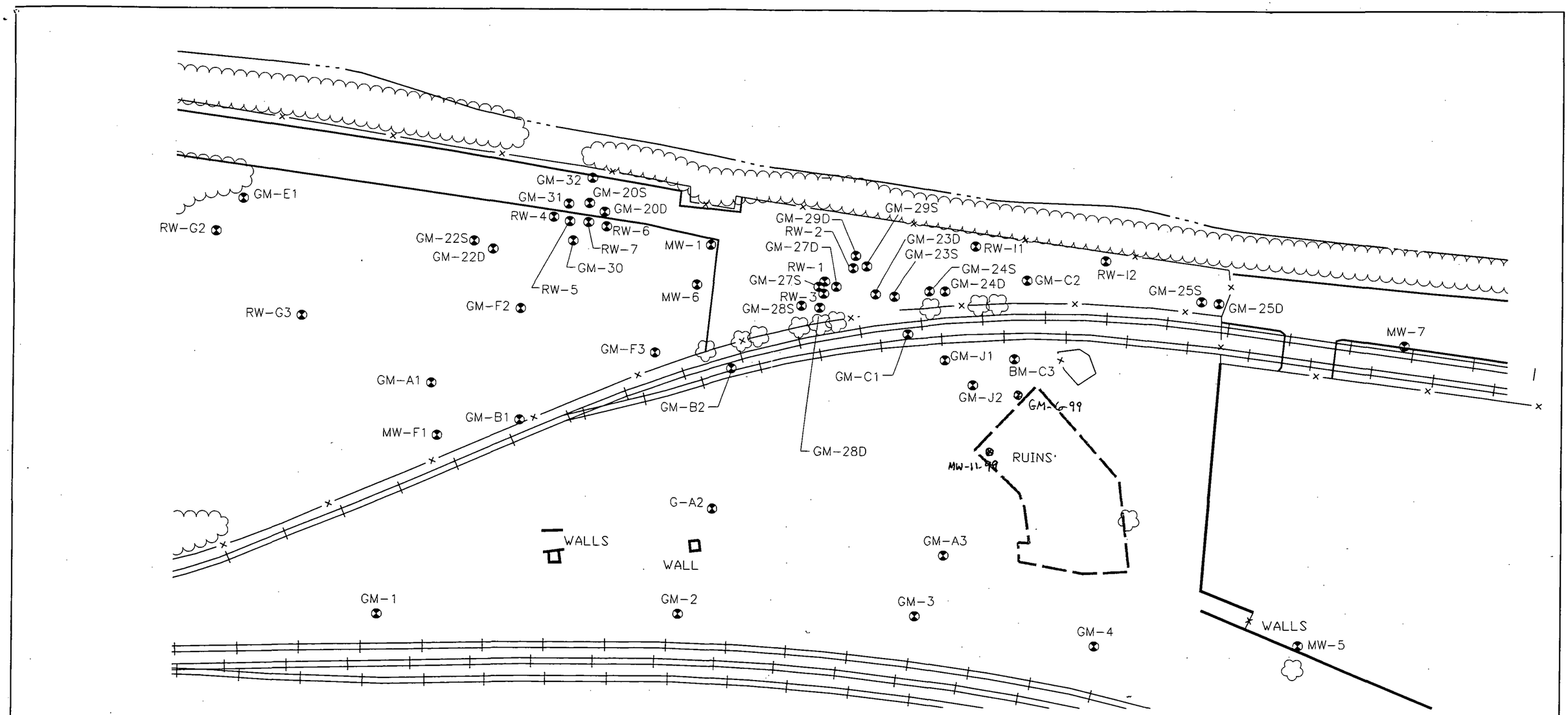
		Product Thickness (feet)								
			Post-EFRT							
Monitoring Location	Monitoring or Recovery Well	Pre-EFRT 8/19/2002	Immediately 8/20/2002	1 hour 8/20/2002	2-4 hours 8/20/2002	1 day 8/21/2002	2 days 8/22/2002	1 week 8/26-27/02	2 weeks 9/3/2002	1 month 9/23/2002
GM-6-99	MW	2.52	--	0.04	0.07	0.24	0.12	1.28	2.68	2.75
GM-20D	MW	2.91	0.10	0.15	0.40	2.73	5.47	4.60	3.92	2.45
GM-20S	MW	0.18	--	--	--	0.01	0.02	0.03	0.01	0.01*
GM-27D	MW	0.61	--	--	--	--	--	--	--	sheen*
GM-29D	MW	0.67	--	--	--	--	--	--	--	sheen*
GM-30	MW	0.89	--	--	--	--	--	--	--	sheen*
RW-3	MW	2.57	--	--	--	--	--	--	--	sheen*
RW-G2	MW	0.16	--	--	--	--	--	--	--	0.04*
GM-24D	RW	1.70	--	0.01	0.01	0.11	0.21	0.45	1.25	2.47
GM-24S	RW	0.17	--	0.01	0.01	0.02	0.05	0.04	0.04	0.18*
GM-25D	RW	0.02	--	--	--	--	--	--	0.06	0.01*
GM-28D	RW	0.02	--	--	--	--	--	--	--	sheen*
GM-28S	RW	0.07	--	--	--	--	0.01	0.01	0.01	0.10*
GM-29S	RW	0.02	--	--	0.01	0.01	0.02	--	--	0.13*
GM-31	RW	0.54	--	--	--	--	--	--	--	0.01*
GM-C2	RW	0.07	--	--	--	--	0.01	0.04	0.03	0.11*
GM-C3	RW	0.21	--	--	--	--	--	--	--	sheen*
GM-J2	RW	0.90	--	--	--	0.01	0.04	0.06	0.20	0.55*
RW-5	RW	0.01	--	--	--	--	--	--	0.01	0.04*
RW-7	RW	0.05	--	--	--	--	0.01	0.01	0.05	0.16*

Notes
-- = product not measurable.
Values listed for 2-4 hours, 1 day, 2 days, and 1 week represent maximum values of multiple measurements conducted during that specific period.
sheen = oil/water interface probe indicates product at a thickness of less than 0.01 foot.
* = product absorbent sock placed in well following measurement.

Table 2
Product and Water Level Measurements - Skimming Wells
Sylvan Slough - Rock Island, IL
Delta No. A097-130

	8/19/2002						9/23/2002				
Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)	Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)
GM22D	21.26		0.00	549.87	8.67	GM22D	23.10	21.52	1.58	549.41	8.21
GM23D	20.96		0.00	549.90	13.88	GM23D	not meas.	not meas.	--	--	--
GM24S	18.50	18.33	0.17	551.94	3.75	GM24S	19.04	18.86	0.18 *	551.41	3.22
GM24D	22.80	21.10	1.70	550.00	7.79	GM24D	24.00	21.53	2.47	549.47	7.26
GM25D	21.86	21.84	0.02	550.04	7.74	GM25D	22.41	22.40	0.01 *	549.48	7.18
GM28S	16.50	16.43	0.07	554.29	5.41	GM28S	17.32	17.22	0.10 *	553.50	4.62
GM28D	20.66	20.64	0.02	550.20	9.31	GM28D	21.22	21.22	sheen *	--	--
GM29S	17.26	17.24	0.02	553.92	4.78	GM29S	18.03	17.90	0.13 *	553.24	4.10
GM31	21.74	21.20	0.54	550.02	11.97	GM31	21.75	21.74	0.01 *	549.55	11.50
GM32	17.00		0.00	549.91	13.90	GM32	17.60		0.00	553.42	17.41
RW4	20.98		0.00	549.97	11.77	RW4	21.50	21.50	sheen *	--	--
RW5	20.95	20.94	0.01	550.11	11.61	RW5	21.54	21.50	0.04 *	549.55	11.05
RW6	21.08		0.00	549.87	10.67	RW6	21.51	21.51	sheen *	--	--
RW7	21.10	21.05	0.05	549.89	11.99	RW7	21.65	21.49	0.16 *	549.44	11.54
C2	18.43	18.36	0.07	552.81	2.73	C2	19.05	18.94	0.11 *	552.23	2.15
C3	13.96	13.75	0.21	553.67	6.47	C3	14.32	14.32	sheen *	--	--
D1	16.83		0.00	554.23	3.38	D1	16.85	16.85	sheen *	--	--
G3	20.18		0.00	551.18	12.88	G3	20.63		0.00	550.73	12.43
I1	17.00		0.00	550.13	13.60	I1	17.57	17.57	sheen *	--	--
J2	16.30	15.40	0.90	550.98	12.88	J2	16.58	16.03	0.55 *	550.39	12.29

* = product absorbent sock placed in well following measurement.



LEGEND

- MONITORING WELL/NUMBER
- FENCE
- RAILROAD TRACKS
- P/A PAVED AREA
- TREE
- TREE LINE
- WATERS EDGE

North

0 80

SCALE IN FEET

FIGURE 1
SITE MAP
SYLVAN SLOUGH
BNSF/NAVISTAR
ROCK ISLAND, ILLINOIS

PROJECT NO.	PREPARED BY	
A097-130	GP	DD
DATE	REVIEWED BY	FILE NAME
8/14/02		97130ASM-1

Delta Environmental Consultants, Inc.

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October 30, 2002

Mr. Ken Theisen
USEPA/Region V
77 West Jackson Boulevard HSE-5J
Chicago, IL 60604

Subject: Status Update – Post Enhanced Product Recovery Monitoring
Sylvan Slough Removal Action Site
Rock Island, Illinois
Delta Project No. A097-130

Dear Mr. Theisen:

This report updates the status of supplementary remedial actions for the Sylvan Slough site located in Rock Island, Illinois. Ground water and product elevation measurements completed since the submittal of the October 16, 2002, *Status Update* are detailed herein. Locations of wells discussed in this report are shown on the enclosed figure.

Product Thicknesses

On October 21, 2002, ground water and product levels were measured at monitoring and recovery wells at which enhanced fluid recovery technology (EFRT) was performed. Ground water and product levels were also collected at all of the project extraction wells.

Product thicknesses at the applicable EFRT wells measured since the remedial event are summarized on Table 1. In general, the placement of product absorbent socks in several of the wells in September 2002 has reduced oil thicknesses in most locations. On October 21, five wells at which EFRT was applied contained measurable product, as compared to all 20 wells on September 23. Wells GM-20D (5.63 feet), GM-24D (2.39 feet), GM-28S (0.38 foot), GM-J2 (0.19 foot), and RW-5 (0.97 foot) contained oil thicknesses near pre-EFRT levels.

In addition to the 12 extraction wells at which EFRT was applied, product was measurable at recovery wells GM-22D (2.17 feet) and GM-23D (less than 0.01 foot). Product thicknesses measured at extraction wells in September and October 2002 are summarized in Table 2.

Monitoring and Future Actions

During the November 2002 site visit, a complete round of ground water and product level measurements will be collected. Oil-sorbent socks will be replaced, if necessary, or installed in wells that display oil thicknesses.

At wells containing significant product thicknesses, such as GM-6-99, GM-20D, GM-22D, and GM-24D, additional product recovery will be performed if feasible. Skimmer pumps will be placed in monitoring wells that contain significant oil thicknesses and will be connected to the extraction system. Intermittent (approximately

one day per week) operation of the extraction system will be performed. The effectiveness of these measures will be evaluated during the December 2002 site visit.

Delta will continue to submit monthly project status reports documenting the recovery event and continual monitoring and adjustments. If you have any questions regarding this status update and/or future activities, please contact me at (651) 697-5243.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Dean A. Krebs, P.E.
Project Engineer/Project Manager

DVP/mjw

Enclosure

cc: Mr. Gregory Jeffries – Burlington Northern Santa Fe
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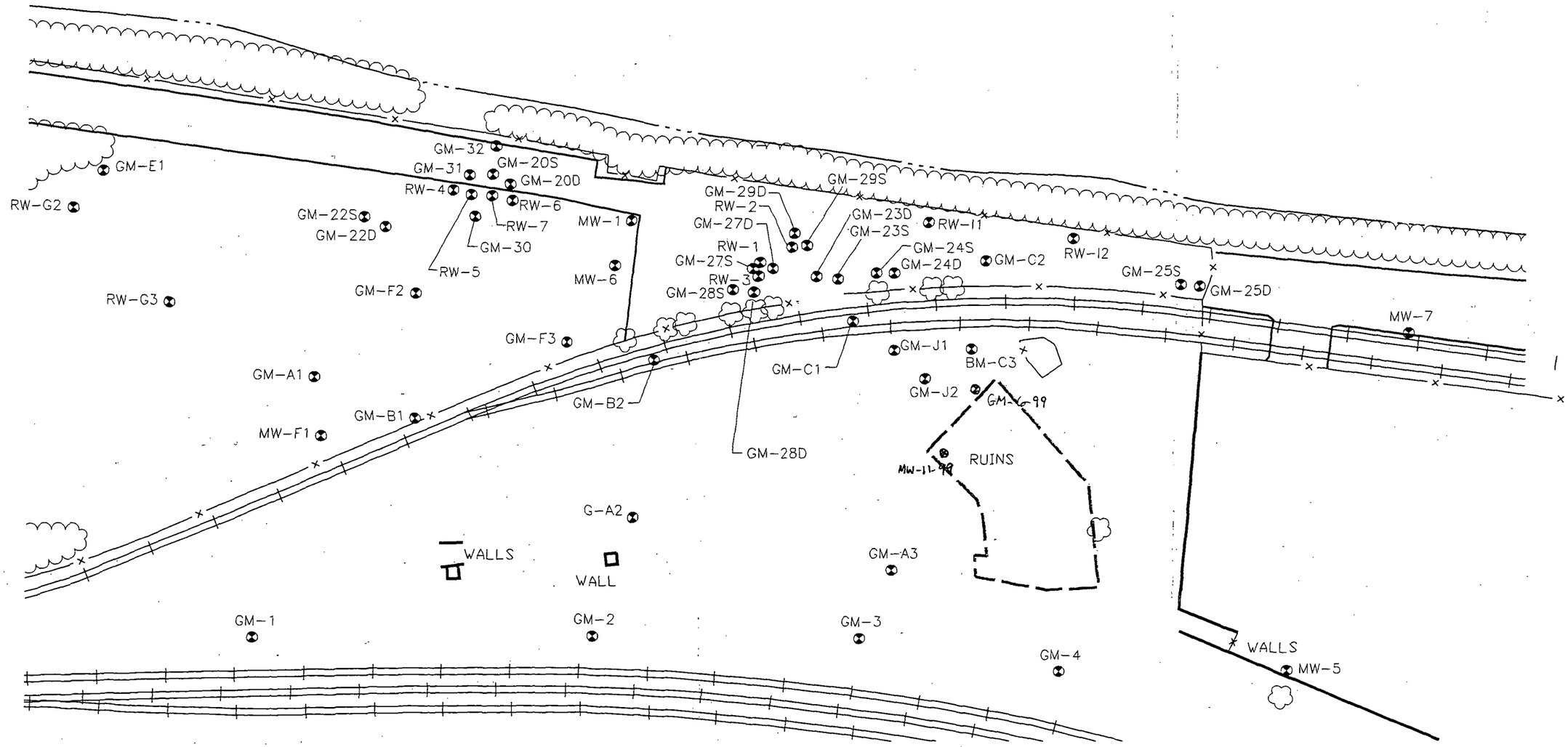

LEGEND

- MONITORING WELL/NUMBER
- FENCE
- RAILROAD TRACKS
- P/A PAVED AREA
- TREE
- TREE LINE
- WATERS EDGE

North

0 80

SCALE IN FEET

FIGURE 1
SITE MAP
SYLVAN SLOUGH
BNSF/NAVISTAR
ROCK ISLAND, ILLINOIS

PROJECT NO.	PREPARED BY	
A097-130	GP	DD
DATE	REVIEWED BY	FILE NAME
8/14/02		97130ASM-1

Delta Environmental Consultants, Inc.

Table 2
Product and Water Level Measurements - Skimming Wells
Sylvan Slough - Rock Island, IL
Delta No. A097-130

	9/23/2002						10/21/2002				
Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)	Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)
GM22D	23.10	21.52	1.58	549.41	8.21	GM22D	20.35	18.18	2.17	552.68	11.48
GM23D	not meas.	not meas.	--	--	--	GM23D	18.13	18.13	sheen *	--	--
GM24S	19.04	18.86	0.18 *	551.41	3.22	GM24S	18.53		0.00 *	551.76	3.57
GM24D	24.00	21.53	2.47	549.47	7.26	GM24D	20.60	18.21	2.39	552.80	10.59
GM25D	22.41	22.40	0.01 *	549.48	7.18	GM25D	19.39		0.00 *	552.49	10.19
GM28S	17.32	17.22	0.10 *	553.50	4.62	GM28S	17.83	17.45	0.38 *	553.23	4.35
GM28D	21.22	21.22	sheen *	--	--	GM28D	18.01		0.00 *	552.83	11.94
GM29S	18.03	17.90	0.13 *	553.24	4.10	GM29S	17.97		0.00 *	553.19	4.05
GM31	21.75	21.74	0.01 *	549.55	11.50	GM31	18.36		0.00 *	552.93	14.88
GM32	17.60		0.00	553.42	17.41	GM32	14.19		0.00	556.83	20.82
RW4	21.50	21.50	sheen *	--	--	RW4	18.11		0.00 *	552.84	14.64
RW5	21.54	21.50	0.04 *	549.55	11.05	RW5	19.08	18.11	0.97	552.82	14.32
RW6	21.51	21.51	sheen *	--	--	RW6	18.21		0.00 *	552.74	13.54
RW7	21.65	21.49	0.16 *	549.44	11.54	RW7	18.41		0.00 *	552.54	14.64
C2	19.05	18.94	0.11 *	552.23	2.15	C2	18.52		0.00 *	552.66	2.58
C3	14.32	14.32	sheen *	--	--	C3	14.42		0.00 *	553.03	5.83
D1	16.85	16.85	sheen *	--	--	D1	17.81		0.00 *	553.25	2.40
G3	20.63		0.00	550.73	12.43	G3	18.61		0.00	552.75	14.45
I1	17.57	17.57	sheen *	--	--	I1	14.22		0.00 *	556.62	20.09
J2	16.58	16.03	0.55 *	550.39	12.29	J2	13.81	13.62	0.19 *	552.85	14.75

* = product absorbent sock placed in well.

Table 1
Product Thickness Summary - Enhanced Product Recovery
Sylvan Slough - Rock Island, IL
Delta No. A097-130

		Product Thickness (feet)									
			Post-EFRT								
Monitoring Location	Well Type	Pre-EFRT 8/19/2002	Immediately 8/20/2002	1 hour 8/20/2002	2-4 hours 8/20/2002	1 day 8/21/2002	2 days 8/22/2002	1 week 8/26-27/02	2 weeks 9/3/2002	1 month 9/23/2002	2 months 10/21/2002
GM-6-99	MW	2.52	--	0.04	0.07	0.24	0.12	1.28	2.68	2.75	--
GM-20D	MW	2.91	0.10	0.15	0.40	2.73	5.47	4.60	3.92	2.45	5.63
GM-20S	MW	0.18	--	--	--	0.01	0.02	0.03	0.01	0.01*	--*
GM-27D	MW	0.61	--	--	--	--	--	--	--	sheen*	--*
GM-29D	MW	0.67	--	--	--	--	--	--	--	sheen*	--*
GM-30	MW	0.89	--	--	--	--	--	--	--	sheen*	--*
RW-3	MW	2.57	--	--	--	--	--	--	--	sheen*	--*
RW-G2	MW	0.16	--	--	--	--	--	--	--	0.04*	--*
GM-24D	RW	1.70	--	0.01	0.01	0.11	0.21	0.45	1.25	2.47	2.39
GM-24S	RW	0.17	--	0.01	0.01	0.02	0.05	0.04	0.04	0.18*	--*
GM-25D	RW	0.02	--	--	--	--	--	--	0.06	0.01*	--*
GM-28D	RW	0.02	--	--	--	--	--	--	--	sheen*	--*
GM-28S	RW	0.07	--	--	--	--	0.01	0.01	0.01	0.10*	0.38*
GM-29S	RW	0.02	--	--	0.01	0.01	0.02	--	--	0.13*	--*
GM-31	RW	0.54	--	--	--	--	--	--	--	0.01*	--*
GM-C2	RW	0.07	--	--	--	--	0.01	0.04	0.03	0.11*	--*
GM-C3	RW	0.21	--	--	--	--	--	--	--	sheen*	--*
GM-J2	RW	0.90	--	--	--	0.01	0.04	0.06	0.20	0.55*	0.19*
RW-5	RW	0.01	--	--	--	--	--	--	0.01	0.04*	0.97
RW-7	RW	0.05	--	--	--	--	0.01	0.01	0.05	0.16*	--*

Notes
Well types: MW = monitoring well, RW = recovery well.
-- = product not measurable.
Values listed for 2-4 hours, 1 day, 2 days, and 1 week represent maximum values of multiple measurements conducted during that specific period.
sheen = oil/water interface probe indicates product at a thickness of less than 0.01 foot.
* = product absorbent sock placed in well following measurement.

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December 31, 2002

Mr. Ken Theisen
USEPA/Region V
77 West Jackson Boulevard HSE-5J
Chicago, IL 60604

Subject: Status Update – Post Enhanced Product Recovery Monitoring
Sylvan Slough Removal Action Site
Rock Island, Illinois
Delta Project No. A097-130

Dear Mr. Theisen:

This report updates the status of supplementary remedial actions for the Sylvan Slough site located in Rock Island, Illinois. Ground water and product elevation measurements completed in November 2002 are detailed herein. Locations of wells discussed in this report are shown on the enclosed figure.

Product Thicknesses

On November 26, 2002, ground water and product levels were measured at monitoring and recovery wells at which enhanced fluid recovery technology (EFRT) was performed. Ground water and product levels were also collected at all of the project extraction wells.

Product thicknesses at the applicable EFRT wells measured since the August 2002 remedial event are summarized on Table 1. In general, product thicknesses measured in November 2002 were similar to those gauged the previous month. A total of nine wells contained measurable product in November: monitoring wells GM-6-99 (0.14 foot), GM-20D (1.89 feet), GM-24S (0.21 foot), GM-24D (2.70 feet), GM-28S (0.61 foot), GM-29S (0.04 foot), GM-C2 (less than 0.01 foot), GM-J2 (0.43 foot), and RW-5 (0.92 foot).

In addition to the 12 extraction wells at which EFRT was applied, product was measurable at recovery well GM-22D (3.55 feet). Product thicknesses measured at extraction wells in October and November 2002 are summarized in Table 2. Skimmer pumps were re-installed in extraction wells GM-22D, GM-24D, GM-28S, RW-5, and GM-J2, and the recovery system was restarted during the site visit. The system will be shut down after roughly 1 week of operation to allow additional product to infiltrate into the extraction wells before restarting.

Monitoring and Future Actions

During the December 2002 site visit, a complete round of ground water and product level measurements will be collected. Oil-sorbent socks will be replaced or installed in wells that display oil thicknesses. The skimmer pump intake depths will be adjusted, if necessary, to optimize product recovery. The recovery system will be restarted and operated for approximately 1 week.

Recovery of product at monitoring well MW-20D will be attempted through use of a portable pneumatic pump. Product recovered from this well will be disposed in the system collection tank.

Delta will continue to submit monthly project status reports documenting the recovery event and continual monitoring and adjustments. If you have any questions regarding this status update and/or future activities, please contact me at (651) 697-5243.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Dean Krebs

Dean A. Krebs, P.E.
Project Engineer/Project Manager

DVP/mjw

Enclosure

cc: Mr. Gregory Jeffries – Burlington Northern Santa Fe
Mr. Jack Shih – Navistar International Transportation Corp.
Mr. Doug Wilson – Maytag Corporation

Table 1
Product Thickness Summary - Enhanced Product Recovery
Sylvan Slough - Rock Island, IL
Delta No. A097-130

		Product Thickness (feet)										
			Post-EFRT									
Monitoring Location	Well Type	Pre-EFRT 8/19/2002	Immediately 8/20/2002	1 hour 8/20/2002	2-4 hours 8/20/2002	1 day 8/21/2002	2 days 8/22/2002	1 week 8/26-27/02	2 weeks 9/3/2002	1 month 9/23/2002	2 months 10/21/2002	3 months 11/26/2002
GM-6-99	MW	2.52	--	0.04	0.07	0.24	0.12	1.28	2.68	2.75	--	0.14*
GM-20D	MW	2.91	0.10	0.15	0.40	2.73	5.47	4.60	3.92	2.45	5.63	1.89
GM-20S	MW	0.18	--	--	--	0.01	0.02	0.03	0.01	0.01*	--*	--*
GM-27D	MW	0.61	--	--	--	--	--	--	--	sheen*	--*	--*
GM-29D	MW	0.67	--	--	--	--	--	--	--	sheen*	--*	--*
GM-30	MW	0.89	--	--	--	--	--	--	--	sheen*	--*	--*
RW-3	MW	2.57	--	--	--	--	--	--	--	sheen*	--*	--*
RW-G2	MW	0.16	--	--	--	--	--	--	--	0.04*	--*	--*
GM-24S	RW	0.17	--	0.01	0.01	0.02	0.05	0.04	0.04	0.18*	--*	0.21*
GM-24D	RW	1.70	--	0.01	0.01	0.11	0.21	0.45	1.25	2.47	2.39	2.7 (P)
GM-25D	RW	0.02	--	--	--	--	--	--	0.06	0.01*	--*	--*
GM-28S	RW	0.07	--	--	--	--	0.01	0.01	0.01	0.10*	0.38*	0.61 (P)
GM-28D	RW	0.02	--	--	--	--	--	--	--	sheen*	--*	--*
GM-29S	RW	0.02	--	--	0.01	0.01	0.02	--	--	0.13*	--*	0.04*
GM-31	RW	0.54	--	--	--	--	--	--	--	0.01*	--*	--*
GM-C2	RW	0.07	--	--	--	--	0.01	0.04	0.03	0.11*	--*	sheen*
GM-C3	RW	0.21	--	--	--	--	--	--	--	sheen*	--*	--*
GM-J2	RW	0.90	--	--	--	0.01	0.04	0.06	0.20	0.55*	0.19*	0.43 (P)
RW-5	RW	0.01	--	--	--	--	--	--	0.01	0.04*	0.97	0.92 (P)
RW-7	RW	0.05	--	--	--	--	0.01	0.01	0.05	0.16*	--*	--*

Notes
Well types: MW = monitoring well, RW = recovery well.
-- = product not measurable.
Values listed for 2-4 hours, 1 day, 2 days, and 1 week represent maximum values of multiple measurements conducted during that specific period.
sheen = oil/water interface probe indicates product at a thickness of less than 0.01 foot.
* = product absorbent sock placed in well following measurement.
(P) = pump replaced in well, system restarted.

Table 2
Product and Water Level Measurements - Skimming Wells
Sylvan Slough - Rock Island, IL
Delta No. A097-130

	10/21/2002						11/26/2002				
Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)	Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)
GM22D	20.35	18.18	2.17	552.68	11.48	GM22D	25.56	22.01	3.55	548.68	7.48
GM23D	18.13	18.13	sheen *	552.73	16.71	GM23D	22.05		0.00 *	548.81	12.79
GM24S	18.53		0.00 *	551.76	3.57	GM24S	19.95	19.74	0.21 *	550.52	2.33
GM24D	20.60	18.21	2.39	552.80	10.59	GM24D	24.81	22.11	2.70	548.86	6.65
GM25D	19.39		0.00 *	552.49	10.19	GM25D	22.98		0.00 *	548.90	6.60
GM28S	17.83	17.45	0.38 *	553.23	4.35	GM28S	18.70	18.09	0.61 *	552.56	3.68
GM28D	18.01		0.00 *	552.83	11.94	GM28D	21.88		0.00 *	548.96	8.07
GM29S	17.97		0.00 *	553.19	4.05	GM29S	18.65	18.61	0.04 *	552.55	3.40
GM31	18.36		0.00 *	552.93	14.88	GM31	22.35		0.00 *	548.94	10.89
GM32	14.19		0.00	556.83	20.82	GM32	18.13		0.00	552.89	16.88
RW4	18.11		0.00 *	552.84	14.64	RW4	22.15		0.00 *	548.80	10.60
RW5	19.08	18.11	0.97	552.82	14.32	RW5	22.89	21.97	0.92	548.97	10.46
RW6	18.21		0.00 *	552.74	13.54	RW6	22.16		0.00 *	548.79	9.59
RW7	18.41		0.00 *	552.54	14.64	RW7	22.22		0.00 *	548.73	10.83
C2	18.52		0.00 *	552.66	2.58	C2	19.85	19.85	sheen	551.33	1.25
C3	14.42		0.00 *	553.03	5.83	C3	15.48		0.00 *	551.97	4.77
D1	17.81		0.00 *	553.25	2.40	D1	18.46		0.00 *	552.60	1.75
G3	18.61		0.00	552.75	14.45	G3	21.12		0.00	550.24	11.94
I1	14.22		0.00 *	556.62	20.09	I1	18.17	17.57	0.60 *	553.20	16.67
J2	13.81	13.62	0.19 *	552.85	14.75	J2	17.47	17.04	0.43	549.40	11.30

* = product absorbent sock placed in well.

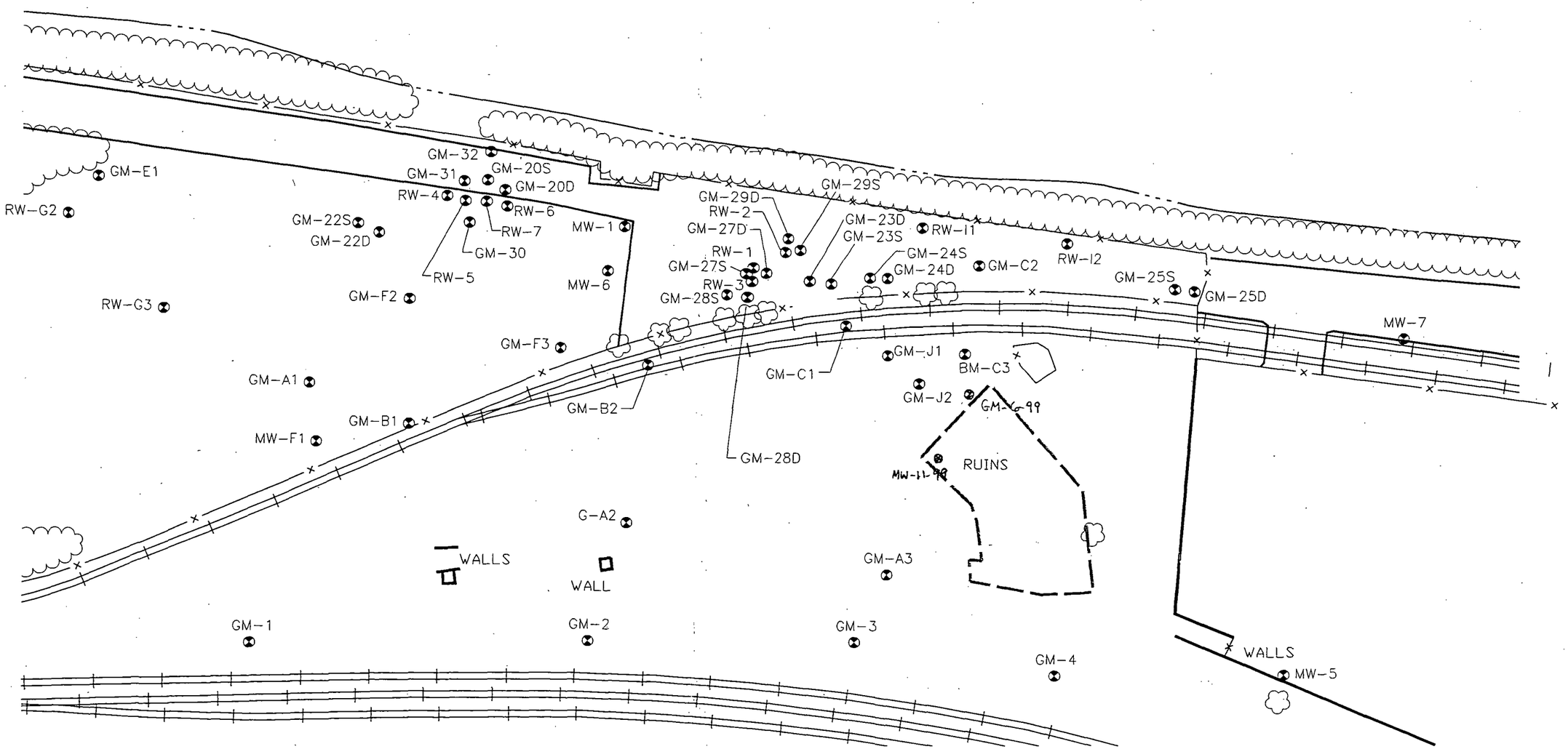

FIGURE 1
SITE MAP
SYLVAN SLOUGH
BNSF/NAVISTAR
ROCK ISLAND, ILLINOIS

PROJECT NO.	PREPARED BY	
A097-130	GP	DD
DATE	REVIEWED BY	FILE NAME
8/14/02		97130ASM-1

Delta Environmental Consultants, Inc.

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January 9, 2003

Mr. Ken Theisen
USEPA/Region V
77 West Jackson Boulevard HSE-5J
Chicago, IL 60604

Subject: Status Update – Post Enhanced Product Recovery Monitoring
Sylvan Slough Removal Action Site
Rock Island, Illinois
Delta Project No. A097-130

Dear Mr. Theisen:

This report updates the status of supplementary remedial actions for the Sylvan Slough site located in Rock Island, Illinois. Ground water and product elevation measurements completed in December 2002 are detailed herein. Locations of wells discussed in this report are shown on the enclosed figure.

Product Thicknesses

On December 23, 2002, ground water and product levels were measured at monitoring and recovery wells at which enhanced fluid recovery technology (EFRT) was performed. A quarterly round of ground water and product levels were also collected at all of the remaining project extraction and monitoring wells.

Product thicknesses at the applicable EFRT wells measured since the August 2002 remedial event are summarized on Table 1. In general, product thicknesses measured in December 2002 were similar to those gauged the previous month. A total of ten wells contained measurable product in December: monitoring wells GM-6-99 (less than 0.01 foot), GM-20D (1.79 feet), GM-24S (0.13 foot), GM-24D (1.36 feet), GM-28S (0.37 foot), GM-29S (0.96 foot), GM-30 (less than 0.01 foot), GM-C2 (0.03 foot), GM-J2 (0.05 foot), and RW-5 (0.07 foot).

In addition to the 12 extraction wells at which EFRT was applied, product was measurable at recovery wells GM-22D (1.5 feet) and GM-D1 (less than 0.01 foot). Product thicknesses measured at extraction wells in November and December 2002 are summarized in Table 2.

Product was also measurable at monitoring wells GM-C1 (0.19 foot) and GM-E1 (0.14 foot) during the December quarterly measurements. Product absorbent socks were placed in these wells, and oil thicknesses will be monitored at these locations monthly.

The recovery system operated from November 26 (the previous site visit) through December 5, 2002. During the December 23 site visit, skimmer pump intake elevations in extraction wells GM-22D, GM-24D, GM-28S, RW-5, and GM-J2 were adjusted; a pump was installed in GM-29S; and the recovery system was restarted. As during the previous month, the system will be shut down after roughly 1 week of operation to allow additional product to infiltrate into the extraction wells.

Monitoring and Future Actions

During the January 2003 site visit, ground water and product level measurements will be collected at all site extraction wells, at all EFRT wells, and at all other locations where product was observed in December 2002. Oil-sorbent socks will be replaced or installed in wells that display oil thicknesses. The skimmer pump intake depths will be adjusted, if necessary, to optimize product recovery. The recovery system will be restarted and operated for approximately 1 week.

Recovery of product at monitoring well MW-20D was unsuccessful in December 2002. This will be attempted again in January with a portable pneumatic pump and a modified setup.

Delta will continue to submit monthly project status reports documenting the recovery event and continual monitoring and adjustments. If you have any questions regarding this status update and/or future activities, please contact me at (651) 697-5243.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Dean A. Krebs, P.E.
Project Engineer/Project Manager

DVP/mjw

Enclosure

cc: Mr. Gregory Jeffries – Burlington Northern Santa Fe
Mr. Jack Shih – Navistar International Transportation Corp.
Mr. Doug Wilson – Maytag Corporation

Table 1
Product Thickness Summary - Enhanced Product Recovery
Sylvan Slough - Rock Island, IL
Delta No. A097-130

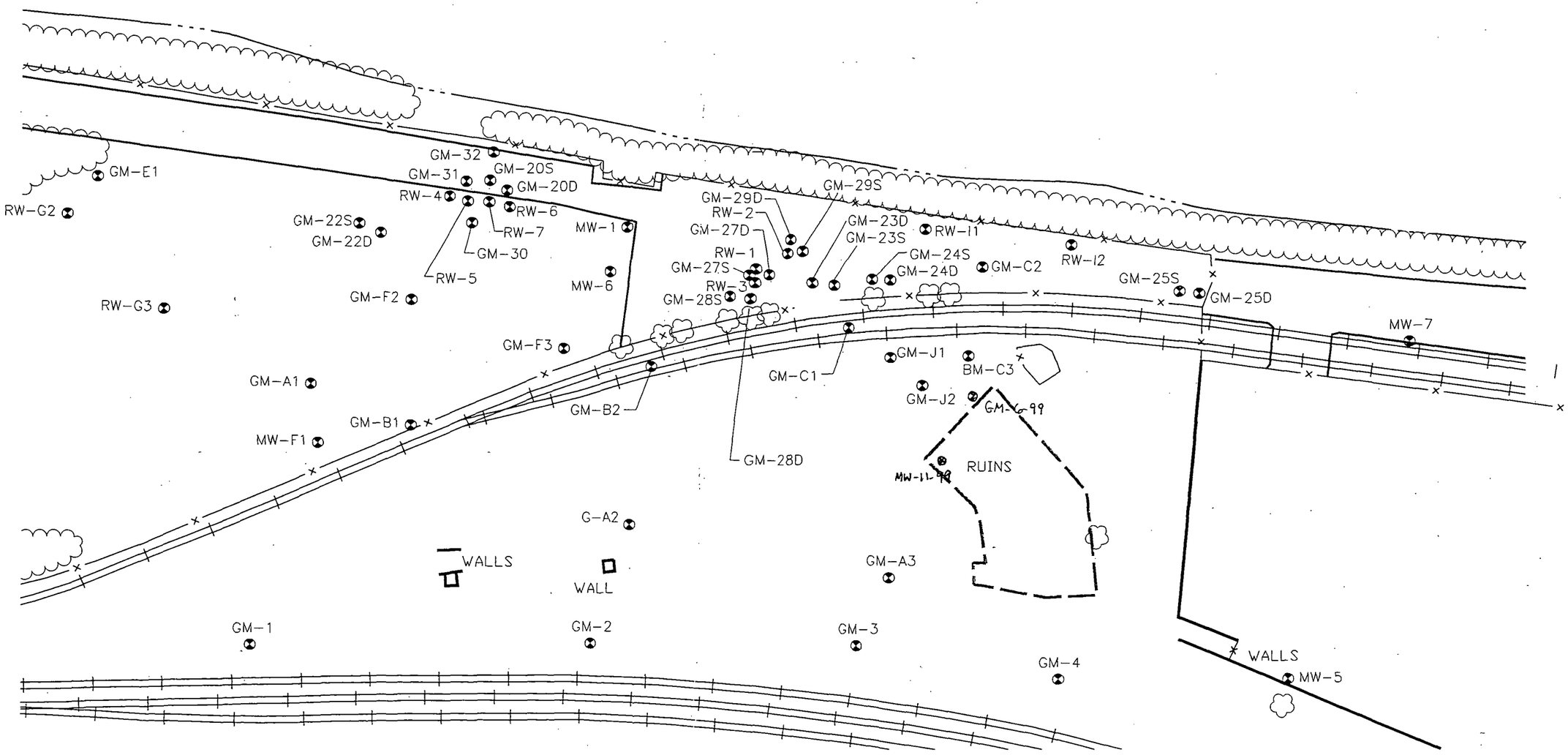
		Product Thickness (feet)											
			Post-EFRT										
Monitoring Location	Well Type	Pre-EFRT 8/19/2002	Immediately 8/20/2002	1 hour 8/20/2002	2-4 hours 8/20/2002	1 day 8/21/2002	2 days 8/22/2002	1 week 8/26-27/02	2 weeks 9/3/2002	1 month 9/23/2002	2 months 10/21/2002	3 months 11/26/2002	4 months 12/23/2002
GM-6-99	MW	2.52	--	0.04	0.07	0.24	0.12	1.28	2.68	2.75	--	0.14*	sheen*
GM-20D	MW	2.91	0.10	0.15	0.40	2.73	5.47	4.60	3.92	2.45	5.63	1.89	1.79
GM-20S	MW	0.18	--	--	--	0.01	0.02	0.03	0.01	0.01*	--*	--*	--*
GM-27D	MW	0.61	--	--	--	--	--	--	--	sheen*	--*	--*	--*
GM-29D	MW	0.67	--	--	--	--	--	--	--	sheen*	--*	--*	--*
GM-30	MW	0.89	--	--	--	--	--	--	--	sheen*	--*	--*	sheen*
RW-3	MW	2.57	--	--	--	--	--	--	--	sheen*	--*	--*	--*
RW-G2	MW	0.16	--	--	--	--	--	--	--	0.04*	--*	--*	--*
GM-24S	RW	0.17	--	0.01	0.01	0.02	0.05	0.04	0.04	0.18*	--*	0.21*	0.13*
GM-24D	RW	1.70	--	0.01	0.01	0.11	0.21	0.45	1.25	2.47	2.39	2.7 (P)	1.36 (P)
GM-25D	RW	0.02	--	--	--	--	--	--	0.06	0.01*	--*	--*	--
GM-28S	RW	0.07	--	--	--	--	0.01	0.01	0.01	0.10*	0.38*	0.61 (P)	0.37 (P)
GM-28D	RW	0.02	--	--	--	--	--	--	--	sheen*	--*	--*	--*
GM-29S	RW	0.02	--	--	0.01	0.01	0.02	--	--	0.13*	--*	0.04*	0.96 (P)
GM-31	RW	0.54	--	--	--	--	--	--	--	0.01*	--*	--*	--
GM-C2	RW	0.07	--	--	--	--	0.01	0.04	0.03	0.11*	--*	sheen*	0.03*
GM-C3	RW	0.21	--	--	--	--	--	--	--	sheen*	--*	--*	--*
GM-J2	RW	0.90	--	--	--	0.01	0.04	0.06	0.20	0.55*	0.19*	0.43 (P)	0.05 (P)
RW-5	RW	0.01	--	--	--	--	--	--	0.01	0.04*	0.97	0.92 (P)	0.07 (P)
RW-7	RW	0.05	--	--	--	--	0.01	0.01	0.05	0.16*	--*	--*	--*

Notes
Well types: MW = monitoring well, RW = recovery well.
-- = product not measurable.
Values listed for 2-4 hours, 1 day, 2 days, and 1 week represent maximum values of multiple measurements conducted during that specific period.
sheen = oil/water interface probe indicates product at a thickness of less than 0.01 foot.
* = product absorbent sock placed in well following measurement.
(P) = pump replaced in well, system restarted.

Table 2
Product and Water Level Measurements - Skimming Wells
Sylvan Slough - Rock Island, IL
Delta No. A097-130

	11/26/2002						12/23/2002				
Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)	Well No.	TOC Depth to Water (ft)	TOC Depth to Product (ft)	Product Thick-ness (ft)	Corrected Water Elevation (ft)	Fluid in Well (ft)
GM22D	25.56	22.01	3.55	548.68	7.48	GM22D	23.80	22.30	1.50	548.64	7.44
GM23D	22.05		0.00 *	548.81	12.79	GM23D	22.13		0.00 *	548.73	12.71
GM24S	19.95	19.74	0.21 *	550.52	2.33	GM24S	20.29	20.16	0.13 *	550.11	1.92
GM24D	24.81	22.11	2.70	548.86	6.65	GM24D	23.66	22.30	1.36	548.84	6.63
GM25D	22.98		0.00 *	548.90	6.60	GM25D	23.02		0.00 *	548.86	6.56
GM28S	18.70	18.09	0.61 *	552.56	3.68	GM28S	18.97	18.60	0.37 *	552.08	3.20
GM28D	21.88		0.00 *	548.96	8.07	GM28D	21.97		0.00 *	548.87	7.98
GM29S	18.65	18.61	0.04 *	552.55	3.40	GM29S	19.97	19.01	0.96 *	552.03	2.89
GM31	22.35		0.00 *	548.94	10.89	GM31	22.40		0.00 *	548.89	10.84
GM32	18.13		0.00	552.89	16.88	GM32	18.21		0.00	552.81	16.80
RW4	22.15		0.00 *	548.80	10.60	RW4	22.15		0.00 *	548.80	10.60
RW5	22.89	21.97	0.92	548.97	10.46	RW5	22.23	22.16	0.07	548.88	10.38
RW6	22.16		0.00 *	548.79	9.59	RW6	22.16		0.00 *	548.79	9.59
RW7	22.22		0.00 *	548.73	10.83	RW7	22.14		0.00 *	548.81	10.91
C2	19.85	19.85	sheen	551.33	1.25	C2	20.30	20.27	0.03 *	550.91	0.83
C3	15.48		0.00 *	551.97	4.77	C3	16.11		0.00 *	551.34	4.14
D1	18.46		0.00 *	552.60	1.75	D1	18.98	18.98	sheen *	552.08	1.23
G3	21.12		0.00	550.24	11.94	G3	21.80		0.00	549.56	11.26
I1	18.17	17.57	0.60 *	553.20	16.67	I1	18.24		0.00 *	552.60	16.07
J2	17.47	17.04	0.43	549.40	11.30	J2	17.33	17.28	0.05	549.20	11.10

* = product absorbent sock placed in well.



LEGEND

- MONITORING WELL/NUMBER
- FENCE
- RAILROAD TRACKS
- P/A PAVED AREA
- TREE
- TREE LINE
- WATERS EDGE

North

0 80

SCALE IN FEET

FIGURE 1
SITE MAP
SYLVAN SLOUGH
BNSF/NAVISTAR
ROCK ISLAND, ILLINOIS

PROJECT NO.	PREPARED BY	
A097-130	GP	DD
DATE	REVIEWED BY	FILE NAME
8/14/02		97130ASM-1

Delta Environmental Consultants, Inc.